

Remarks:

Reconsideration of the application is requested. Claims 1-10 remain in the application. Claims 1 and 6 have been amended.

In item 3 of the Office action, the Examiner rejected claims 1-2 and 4-10 as being fully anticipated by Plass under 35 U.S.C. § 102(b). In addition, claim 3 was rejected as being unpatentable over Plass under 35 U.S.C. § 103(a). The rejection has been noted and the claims have been amended in an effort to define more clearly the invention of the instant application.

Before discussing the prior art in detail, a brief review of the invention as claimed is provided. Claim 1 calls for, *inter alia*, a filter configuration having the following features:

a monolithic planar filter having a plurality of capacitors, each of said capacitors having:

a plurality of signal electrodes for connecting to the signal pins,

a ground electrode, and

a dielectric layer formed of a ceramic material disposed between said ground electrode and said plurality of signal electrodes, having two side surfaces, and an edge, said dielectric layer and being block shaped, perforated with pin lead-throughs for receiving the signal pins, and subsequently sintered,

a first of said side surfaces bearing said ground electrode, said side surface bearing

said ground electrode being lapped to planarity to prevent overloads caused by spot-loads, and

a second of said side surfaces bearing said signal electrodes to the signal pins; and

a supporting plate being sintered and formed as a printed-circuit-board dielectric plate with a dielectric constant lower than said dielectric layer and having a supporting-plate pin lead-throughs corresponding to the pin lead-throughs;

said supporting-plate pin lead-throughs having a diameter sufficiently wider than the signal pins to draw solder via capillary action into said pin lead-throughs;

solder drawn into said pin lead-throughs and fixing said planar filter to the signal pins, fixing said supporting plate to the signal pins, fixing said planar filter to said supporting plate, and said signal-pins to the assigned signal electrodes of said capacitors;

said planar filter and said supporting plate being separately finished. (Emphasis added by Applicants.)

In contrast to the invention according to claim 1, Plass teaches a planar filter that can be considered to be a "support plate". The planar filter is connected with carrier in a single piece. Plass does not teach a separate support plate as is described in claim 1 of the instant application.

Plass teaches to apply metallized regions onto the carrier as signal electrodes. A ceramic dielectric is deposited on the metallized regions according to a thick-film process. The thick-film process only can produce thick films having a thickness of 20 to 40 m. This thickness limits the

dielectric strength. Voltage-proof planar filters like those described in claim 1 of the instant application cannot be produced by following the teaches of Plass.

Another difference is that Plass teaches to place the metallization of the ground electrode on the dielectric that covers the signal electrodes. The thus produced raw filter is subsequently sintered. The different materials with different thermal expansion coefficients lead to inner thermal voltages that, in turn, reduce the dielectric strength and cause mechanical stresses. Plass is unable to prevent these effects even when very high-quality metallizations.

In contrast to the Plass and the prior art, the invention as claimed yields a planar filter that has higher dielectric strengths while providing simple and economical construction.

The invention improves on the prior art, the prior art being generally based on the following. The prior art teaches planar filters with a plurality of signal lines with assigned capacitors. The capacitors are formed from ceramic carriers (i.e. the dielectric) that has passages formed therein that correspond to the number and configuration of the signal lines. The signal electrodes of the capacitors are metallized regions that are connected to the signal lines; the signal electrodes are divided by the dielectric; and the signal

electrodes face the ground electrode that is connected to the ground.

The invention as claimed improves the prior art by producing the planar filter and support plate separately. They are only joined after assembly of the plug connector.

The resulting planar filter can be produced by means of pressing or injection molding as a uniform body that is subsequently sintered. Mechanical tensions caused by including different materials are excluded. The post-processing can occur at the uniform base body of the filter, which is metallized only subsequently during the formation of the signal electrodes and the ground electrode.

The support plate is produced by pressing or injection molding and the post-processed. The post-processing also occurs on the uniform material. After this post-processing, the lead-throughs are metallized.

The planar filter and support plate are combined and immediately placed onto each other only during installation of the planar filter in the plug connector. The mechanical connection is made by soldering. The liquid solder is pulled through the lead-through openings by capillary action and connects the metallization of the lead-through opening of the

support plate, the signal electrode, and the metallic signal lines with each other..

The resulting planar filter is suitable for use in plug connectors and can be produced in a simple and economic fashion. Regarding thermal treatment, only uniform bodies are present. The electric rations at the capacitors are easy to control because the thick-layer technology is no longer a requirement for production. In addition, the dielectric strength can meet desired values.

The invention contrasts Plass in that the planar filter and support plate are separate components, which are connected only when the plug connectors are joined. The mechanical connection is provided by soldering. The liquid solder is brought through the signal line lead-throughs in a capillary manner and the connection of the planar filter with the attached support plate is thus made, where by the stability is given after the solder has solidified. In order to prevent mechanical overloads when the support plate rests on the planar filter in certain pots, the surfaces are lapped to planarity.

Accordingly, none of the references, whether taken alone or in any combination, either show or suggest the features of claim 1 or 6. Therefore, claims 1 and 6 are patentable over

the art. Moreover, because all of the dependent claims are ultimately dependent on claim 1 or 6, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 1-10 are solicited. In the event the Examiner should still find any of the claims to be unpatentable, please telephone counsel so that patentable language can be substituted. In the alternative, the entry of the amendment is requested as it is believed to place the application in better condition for appeal, without requiring extension of the field of search.

If an extension of time for this paper is required, petition for extension is herewith made.

Please charge any other fees that might be due with respect to
Sections 1.16 and 1.17 to the Deposit Account of Lerner and
Greenberg, P.A., No. 12-1099.

Respectfully submitted,



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July 2, 2003

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JUL 02 2003

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ART UNIT:

2839

DATE:

7/2/2003

FAX NUMBER:

(703)308-4782 872-9318

TOTAL NO. OF PAGES INCLUDING COVER:

16

PHONE NUMBER:

(703)308-2710

ATTORNEY DOCKET NUMBER:

F-744C

SERIAL NO.:

10/035,873

FILING DATE:

December 31, 2001

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NOTES/COMMENTS:

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